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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,660	05/03/2006	Yuichiro Shindo	OGOSH53USA	4264
270 7590 09/15/2008 HOWSON AND HOWSON SUITE 210 501 OFFICE CENTER DRIVE FT WASHINGTON, PA 19034			EXAMINER ROE, JESSEE RANDALL	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 09/15/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/595,660

**Applicant(s)**

SHINDO, YUICHIRO

**Examiner**

Jessee Roe

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 5 is/are pending in the application.  
4a) Of the above claim(s) 5 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 2 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 3 May 2006  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of the Claims***

Claims 1-2 are currently under examination, claims 3-4 and 6 are canceled, and claim 5 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected method of manufacturing high purity hafnium, with there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 15 July 2008. Applicant's election without traverse of claims 1-2 in the reply filed on 15 July 2008 is acknowledged.

### ***Information Disclosure Statement***

JP 10-205554 and JP 61-242993 were not properly cited on the Information Disclosure Statement filed 3 May 2006 and thus have been lined through. However, these documents have been considered and are cited on the attached PTO-892.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shindo (US 2003/0062261).

In regards to claims 1-2, Shindo ('261) discloses a high purity hafnium metal with minimal impurities (abstract). Shindo ('261) discloses (Example 2) forming a 4N (99.99%) purity level hafnium metal excluding gas components such as carbon, oxygen, and nitrogen [0133]. Oxygen and carbon would be present at levels less than 100 ppm and forming a sputtering target or thin film (claim 4) and zirconium would present at levels of 0.5 weight percent or less (claim 7).

The Examiner notes that the composition disclosed by Shindo ('261) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the claimed amount of gas components such as oxygen, carbon, and nitrogen from the amounts disclosed by Shindo ('261) because Shindo ('261) discloses the same utility throughout the disclosed ranges.

With respect to the recitation "a sulfur content of 10wtppm or less, a phosphorus content of 10wtppm or less, and a zirconium content of 0.1wt% or less" as in claims 1-2, the Examiner notes that purer forms of known products may be patentable, but the mere purity of a product alone does not render the product unobvious. MPEP 2144.04 (VII).

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over the ASM Handbook Volume 2.

In regards to claims 1-2, the ASM Handbook Volume 2 discloses (pg.

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1094, col. 2) purifying metals such as hafnium to a purity approaching 99.999% by chemical vapor deposition when a low-iron starting material would be used.

The ASM Handbook further discloses that if the proper temperature is maintained, oxygen, nitrogen, hydrogen, carbon, and other typical metal impurities would not be carried over.

The Examiner notes that the purity of the hafnium disclosed by the ASM Handbook Volume 2 overlaps the purity of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the claimed hafnium purity from the hafnium purity disclosed by the ASM Handbook Volume 2 because the ASM Handbook Volume 2 discloses the same utility throughout the disclosed range.

With respect to the recitation "A sputtering target or thin film, comprising a sputtering target or thin film formed of high purity hafnium", the Examiner notes that although the ASM Handbook Volume 2 does not specify the size of the hafnium metal, "a sputtering target or thin film" is not defined to exclude any specific size or shape of metal. Furthermore, changing the size/proportion of the hafnium metal would not patentably distinguish over the prior art. MPEP 2144.04 (IV).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

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A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of copending Application No. 10/565767. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-2 of copending application 10/565767 teaches a zirconium composition (1 to 1000wt ppm (0.0001 to 0.1 weight percent)) that overlaps that of the instant invention and gas component (carbon, oxygen and nitrogen) contents that overlap that of the instant invention. Although 10/565,767 does not specify the phosphorus and sulfur contents as in the instant invention, such would encompassed by the 4N to 6N (99.99 to 99.9999) purity range for hafnium.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Claims 1-2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 4 and 10 of copending Application No. 11/994,167. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-2 of copending application 11/994,167 teaches a high purity hafnium of 6N or higher. Claim 4 of copending application 11/994,167 teaches a sputtering target. Claim 10 of copending application 11/994,167 teaches "wherein alpha dose is 0.01 cph/cm<sup>2</sup> or less". This property would also be present in the instant invention due to the same or a substantially similar composition. MPEP 2112.01 I.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

/John P. Sheehan/  
Primary Examiner, Art Unit 1793